7: Gulick E-5 (1952) 1955 ME1 Lebanon ME1

132 (Fisher, 1950, p. 50). From May through October, there is no precipitation at all, except at the beginning and the end of the period.

Along the coast, up to about 1500 feet at least, freezing temperatures in winter are of very rare occurrence, but snow covers the higher slopes continuously during the winter. Patches of it on the summits even defy the broiling sun of August.

At Beirut the average summer temperature is 82°F., and it is frequently oppressively humid (Fisher, 1950, p. 42). In al-Qurnī, as in Beirut, there is no snow in winter, but the district is somewhat cooler and less humid than the city in summer.

133 312 Lebanon, as a whole, is obviously a well-watered country, but its geological structure has led to an over-abundance of water in some districts and a dearth of it in others. Mt. Lebanon consists, essentially, of two thick layers of Jurassic and Cretaceous limestone, interspersed with a layer of sands and clays. Rain water and snow-melt either run off directly or sink through permeable upper strata to emerge as springs at lower levels, especially at between 3000 and 5000 feet, where their downward seepage is blocked by impermeable strata below (Fisher, 1950, p. 374). The abundance of spring water in high mountain fastnesses is the primary reason for Lebanon's having been so popular as a refuge area for sect groups escaping from persecution.

The drainage system of the country is clearly seen on the map of Lebanon (Fig. 1). The eastern slopes are drained by the large rivers, Litani and Orontes. The western slopes are drained by a series of small rivers whose courses drop from 5000 to 4000 feet to sea level in distances rarely exceeding fifteen miles. The erosion pattern is what one might expect. The small rivers have cut very steep, high banks, nothing less than deep gorges in many cases. Culturally, this is important for at least three reasons: The gorges have made north-south travel very difficult. It has been impossible to use river water for extensive irrigation except, in very recent years, near the mouths of the rivers. The spectacular scenery has added inspiration to the love of the Lebanese for their country, and it attracts many foreign tourists every summer. Water erosion has also created innumerable caves (used both by Stone Age man and latter-day troglodites), a large natural bridge, and at least one horrendous underground river (reputed to be the original River Styx) which has not yet been fully explored.

Although the lower slopes are not, as a whole, entirely devoid of springs, and although what bottomland there is is fully exploited, there are districts which have no springs, no local streams, and no alluvial soil. One such district is al-Qurnī. This district is located about halfway between the large urban centers of Beirut and Tripoli, and the main highway and only railroad between these cities pass through it. This route has been used ever since the advent of man in the area, but the present paved highway dates from about 1930, while the railroad was built by the British army in 1942. Also of very recent date are the automobile roads within the district. The road from Be'shīrra to Ghazzeeya is paved, and has been

191 [478]

7: Gulick E-5 (1952) 1955 ME1 Lebanon ME1

in existence about fifteen years. The road from Shaykhan through Munqif to Ḥilwi has been built since 1945, and the segment between the shrine of Mar Jurjis and Ḥilwi is not yet paved. The road which connects Lower and Upper Burbara is usable but definitely still under construction. The villagers are very conscious of the fact that their road system is a new phenomenon and that it is as yet incomplete. The automobile roads more or less follow the line of old paths many of which are still used. Although the paving of these is generally too rough for any sort of wheeled vehicle, it is essential for any kind of travel in the muddy rainy season.

It would be a great mistake to deduce from the map (Fig. 2) that the plan of these villages (or of any Lebanese villages) is derived from the roads which pass through them. Middle Eastern villages in general are house-clusters, sometimes approaching the southwestern pueblo in degree of compactness. One finds one's way from house to house by a maze of twisting paths, which become alleyways in the larger towns. The only suggestion of physical planning is the frequent occurrence of an open space, *sāḥa*, where the small shops and the church or mosque tend to be concentrated (Tannous, 1944, p. 528). In the minds of their respective inhabitants, the plan of the Lebanese village is very different from its counterpart in North America, in which the village green, the courthouse square, or Main Street are definitely centers. The new roads in al-Qurni are recent impositions on the traditional culture. The one which longitudinally bisects Munqif follows, in part, an old path, but a number of old buildings had to be torn down to make room for it.

We have already seen that al-Qurni has no ground water resources. All the water which is used in the district is winter rain water which is collected, Bermuda style, from the roofs of the houses and stored in large, semi-subterranean cisterns of which there are a great number. The physical poverty of the district (cf. Thoumin, 1936, p. 129) is due to its geological structure which Fisher has described:

> Your village lies in a limestone area (middle Cretaceous) underlain by a thin bed of impermeable Cretaceous sands, clays and lignite, with Jurassic limestone lower still. A fault at Tartij [East of al-Qurni] has exposed a small amount of the impermeable layer, so that there is a *chance* that very deep wells sunk at el Munqif might reach this horizon. On the whole, though, I am not very sanguine, as I have found around Jounieh and Maameltein [South of Jbayl] the fact that intensive cultivation stops when these particular outcrops are reached. Also, there is a break (at Tartij) with the main anticline of the mountains, so large springs are ruled out. The sudden change from a point N. of Jounieh from intensive garden cultivation to a sterile garrigue corresponds with the beginning of the limestone-marl outcrops. (W. B. Fisher, Personal Communication, Nov. 13, 1952.)

Before proceeding to a discussion of the flora and fauna of the district, it should be mentioned that at Ḥilwi there *are* two springs. Both, however, are small, and

7: Gulick E-5 (1952) 1955 ME1 Lebanon ME1

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FIG. 2. AL-QUSAYR

312 only one yields potable water—hence the name of the hamlet, which means "sweet."

137 The sparse natural flora of al-Qusayr is an excellent example of garrigue which is widely distributed around the Mediterranean in districts which feature thin soils and calcareous outcrops. Comparing garrigue to the relatively more lush vegetation typical of the French Provence, Fisher says:

new construction. This is not the case—at least, it is not to an observable degree. All the stone used in new building in the village are freshly quarried. Perhaps the reason for this is that nearly all the ruins have occupational owners, nearly all of whom are emigrants or their descendants. Even the villagers now admit that "they will never come back," but their property rights are still maintained, either because the elder emigrants hesitate to relinquish their claims or because their American-born children are uninterested, both of which prevent local disposition of the property. However, most of the new stained houses were of the old style, whose roofs would naturally go to pieces if not tended. Consequently, the roofs were removed so that the very valuable timbers in them could be used for other purposes. This hastened the partial collapse of many of the buildings' walls.

HOUSEHOLD ARRANGEMENT AND FURNISHINGS

Nearly every house has its own cistern (*bir*), either within the building or just outside it. The water is entirely winter rain water drawn from the roof of the house and conducted to the cistern, nowadays, by sheet-iron pipes. This is much more efficient than the older method of letting the water flow down a shallow vertical trough on the outside of the wall of the building. The cisterns have circular openings raised off the ground or floor on a stone or concrete curbing. The opening is fitted, more or less tightly, with a wooden cover.

It is one of the women's jobs to draw water from the cistern by means of a sheet-iron, European-made, bucket attached to a chain or rope. The water needed for the day is stored in large, two-handled, pointed-bottom jars (*jarra*), of porous earthenware, which stand in wooden frames in the kitchen corner, or the kitchen [illegible] the spouted pottery or glass drinking jars (*ibriq*), and to the two to three gallon, semi-cylindrical metal tanks in which washing water is stored. These hang against an outside wall or in the wash room if there is one. The tanks are called *kanafiyat*, a term primarily applied to the small brass spigots with which they are fitted. The term is derived from the Hanafi school of Moslem jurisprudence which decided that the use of spigots was not a violation of the provisions of the Koran. Near the *kanafiyat* one usually finds a dish for soap and a towel-rack. A few houses are equipped with hand-pumps, a raised tank, and a limited system of pipes and spigots. This, however, is unusual.

The interior arrangement of the one-room house is essentially the same in every one, although of course there are many minor variations. The following description is composite. On entering the front door, one will observe that the room is divided into two sections, front and back. The division is effected by tall cabinets, with doors and drawers, placed across the room. These are used for keeping clothes, dishes, and so on. This means of division may be supplemented by a curtain. In the front section, a long wooden seat, really a bench with a back and

used as fuel in the city. In the village, hardwood is collected for fuel in addition to the importation of kerosene.

Animal manure is not used extensively as plant fertilizer because it is scarce. Recently this meager supply has been supplemented by British-made chemical fertilizers. Night soil is not used at all.

Animal husbandry is very limited. Each farmer has a yoke of oxen for traction and some have a few cows for milk. There are one or two donkeys in the village. Two farmers keep bees. The hives are formed in the large water jars (jarre) described earlier. Several of these, each split horizontally across the middle, are set in a row. The bees enter and go out by the narrow open ends. The honey is removed by separating the two halves of the jar, and half the honey is left for the bees. Some fowl are kept in the village, primarily for their eggs. Dogs are kept by some householders, and cats by many, for guarding and mousing, respectively. They are not treated as pets, or objects of affection.

It is the lack of water which so seriously limits agricultural productivity in the village. The possibility of drilling successful wells, even with modern equipment, is, as was noted in the last chapter, very remote. Irrigation lines, which affect the coastal strip lower than forty metres above sea level, have been extended almost to Sa'idon from the River Zeedoniye to the south, and to the village of Madfoun, just north of Sa'idon, from the River Jeun. The Qasmi has the misfortune of being halfway between these rivers, at the end of the line in both directions. It is also unfortunate in that since its coastline is more precipitous than surrounding areas, it has a smaller area of potentially irrigable land than the surrounding areas. Nevertheless, it would be of great help to the village if irrigation water could be

CONCLUSION

This chapter can fittingly be closed with a series of questions which summarize, highlight, or give wider perspective to some of the points which have been made. They do not require any comment except that of drawing the reader's attention to their dates, especially those of the last three.

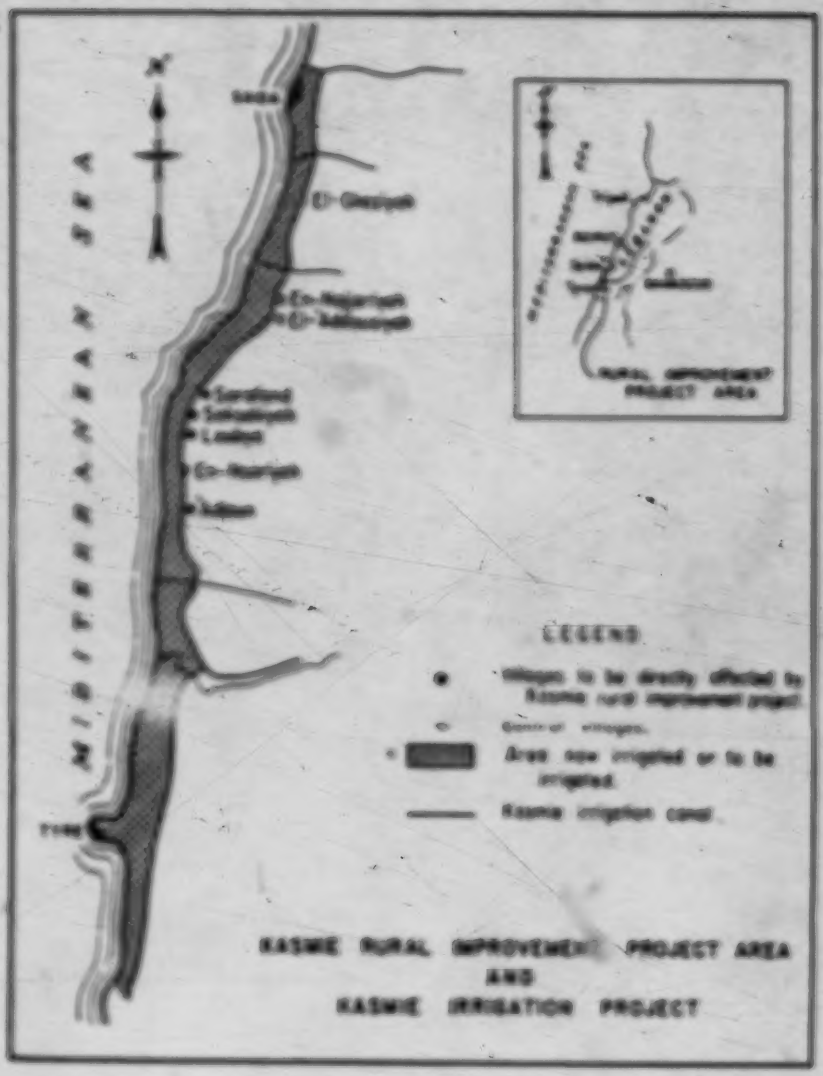
1. It is probable . . . that it was on the slopes of the originally forest-clad mountains of ancient Phoenicia that corn agriculture began. (Lowdermilk, 1944, p. 415.)

2. The effort of the Lebanese has made this country capable of sustaining a relatively dense population. There are few mountainous regions so little favored by nature from which man has drawn such a great agricultural return. (Thomson, 1950, p. 130, translation mine.)

3. The Syrian peasant is more like a miner than a farmer. (Himadeh, 1936, p. 93.)

4. Elsewhere man has cultivated the land; in the Lebanon he has made it. Elsewhere the harvest is the product; here it is the soil. Men cultivate and create an

9: Lebanon G-6 (1982) 1983 ME1 Lebanon ME1



9:Lebanon G-5 (1952)1953 MEI Lebanon MEI

VILLAGE SURVEY

KASMIE RURAL IMPROVEMENT PROJECT

LEBANON

BY

William W. Garnett,
Miles Prescott,
Gabriel Najjar[1]

The five villages to be affected by the Kasmie Rural Improvement Project are located along the northern branch of the Kasmie Irrigation Canal. The area comprising these khurajs[2] includes but largely lies above the Kasmie Irrigation Project which, when completed, will service the rich coastal plain extending from Saida in the north to Ras-El-Ain three miles south of Tyre. The Kasmie Irrigation Project was begun under the French Mandate, continued during the British occupation, and partially completed under the Lebanese Republic. Due to a lack of funds, work on the project was discontinued in 1950 when about half of the total area to be irrigated was under operating canals. It covers an area of 50,000 dunums of land and extends a length of 37 kilometers (23 miles). It averages 1.5 kilometers (one mile) in width. The completed portion of the irrigation works supplies water to prosperous new citrus orchards, banana groves and vegetable gardens.

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[1] Mr. Garnett is head agricultural economist with the Litani River Investigation Group and Chief of the Rural Statistical Surveys Project. Mr. Prescott is an assistant professor of economics at the American University of Beirut who participated in this study as a consultant to the Lebanese Ministry of National Economy. Mr. Najjar is a junior economist on the staff of the Litani Group.

[2] In the Anglo Middle East the English term «village» can mean either the built-up area alone or the built-up area and all the surrounding land farmed by the villagers, which is legally appurtenant to it. To avoid misinterpretation, two Arabic terms have been adopted. The term «khuraj» is used to denote the larger concept which includes the built-up area and other lands appurtenant to it. The term «balad» is used to designate the built-up area or the town itself. Size, either of population or land area, is not involved in the use of these concepts.

9: Lebanon G-5 (1952)1953 MEI Lebanon MEI

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In the Spring of 1952 the Lebanese Government submitted a request to the Technical Cooperation Service, Lebanon, for the completion of the project at an estimated cost of $ 650,000. The Government of Lebanon further requested that preliminary staff studies be made for the Kaamir area by Point Four technicians and their counterparts in the Government. On the basis of these studies, the Technical Cooperation Service, Lebanon, felt that the Kaamir area offered a splendid opportunity for a pilot demonstration Point Four Project. It was planned that the fields of public works, agriculture, public health, education, village craft and industry, and farm credit would receive immediate emphasis. It is these fields that are to be covered by a number of subprojects which constitute the Kaamir Rural Improvement Project. The end result sought is the economic and social improvement of an area where extreme poverty and a low standard of living are the normal conditions.

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It was decided by those in charge of the Improvement Project to select representative villages in the Kaamir area for demonstration centers where the people could be shown the value of a positive rural development program. Five villages were tentatively selected as demonstration centers. Working toward the south, these villages include Sarafand, Sukkariyah, Loubya, En-Nauriyah, and 'Adloun. These five villages are located in one segment of the Kaamir Irrigation Project which services a total of twenty-seven villages. Every facility will be utilized to extend the results obtained in the demonstration area to other parts of rural Lebanon.

The three villages of El-Ghaziyah, En-Najjariyah, and El-'Addawiyah, located just to the south of the proposed Kaamir Rural Improvement Project, have been included in the master irrigation tables. The extension of the Kaamir Irrigation Canal will bring water to their fields. These villages can be considered a control area since they will be affected by construction of the canal but not by the Rural Improvement aspects of the project. It will be well to watch the economic and social impact of development in the project area on these three neighboring villages.

It should be noted that this report deals with the Kaamir Rural Improvement Project and not just the Kaamir Irrigation Project. Included in the Improvement Project are lands of the Irrigation Project but these latter lands constitute only about 20 percent of the total area of the eight villages reported upon.

9:Lebanon G-5 (1952)1953 MEI Lebanon MEI

Irrigation and Crop Pattern

312 The percentage of land under irrigation varies considerably among these five villages (see Table III, column 8). While 89 percent of the total land area of 'Adloun is estimated to be under irrigation, only 2 percent of the total land area of Sarafand to the north is irrigated because the irrigation canal now stops at the village limits of Sarafand. Lands of Loubya, and En-Nueiyah do not extend into the irrigated coastal strip.

241 In the project villages of 'Adloun and Sakhkiyah, where a considerable portion of the land is under irrigation, the principal products by value are bananas, oranges and tomatoes. Other products grown on the irrigated land include okra, eggplant, squash and cucumbers. As the village lands in the project area only recently have been brought under irrigation, the emphasis at present is on the production of bananas and the establishment of citrus groves. The farmer in many cases has interplanted citrus trees with bananas. Banana shoots planted in February will produce fruit the following November, but it takes from six to eight years for an orange tree to mature. Where dry farming is the predominant system, as in Sarafand, Loubya, and En-Nueiyah, the emphasis naturally switches to crops requiring less water. Here the principal crops according to value include wheat, barley, corn, olives, watermelon, and figs.

312 In the project area already serviced by the Kassmie Irrigation Canal, 9,040 dunums are under irrigation. Of this total irrigated area, only 415 dunums are irrigated by pumps, the remainder being irrigated by gravity. Supplementary sources other than the Kassmie Irrigation Canal are used to a very limited extent to irrigate the fields. Sarafand pumps water from local wells. Sakhkiyah utilizes water from the Daoudiyah spring and Loubya spring. Loubya, as well, obtains irrigation water from the Loubya spring. En-Nueiyah, with lands located above the canal, irrigates a few hundred dunums with water pumped from two wells. 'Adloun uses water from the spring of 'Adloun. Small areas of good quality land strung out along but above the canal are irrigated by pumping water from the canal.

Further north in the control area, which has not as yet been reached by the irrigation canal, the irrigated land is almost wholly serviced by pumps. Thus, in En-Najariyah, El-'Akkaouiyah and El-Ghaziyah where 1,100 dunums are under irrigation, over 96 % of the irrigated area is served by pumps. The balance is irrigated by gravity from small springs.

9:Lebanon G-5 (1952)1953 MEI Lebanon MEI

226 Fishing is important as a means of livelihood only at Sarafand. The village proper lies a couple of miles inland but a suburb has grown along the coast where a fishing community exists. The industry, primitive and using only row boats, employs some 200 persons on a part or full-time basis. The gross take is estimated at LL. 80,000 ($22,000) annually. These fishermen often own small plots of farm land, which accounts for many of the 300 small farms reported for Sarafand.

382 464 The Trans-Arabian Pipe Line (Tapline) has its Mediterranean terminus at Saida which lies just north of the area under discussion. About 600 Lebanese workmen are employed by the company, some of them coming from the villages under study. No statistical data are available on this question but it does not appear that employment by Tapline affects the five villages to any great extent.

It is reported that some of the member companies of Tapline are planning to erect an oil refinery near their present operations. During construction employment opportunities for local unskilled labor will probably occur. When the plant is in operation, two or three hundred men will be required, hence continuing employment opportunities will be available. It may be that small industries will be established to use some of the products of the refinery. This would offer an opportunity for limited industrial development. Such diversification is very desirable for this otherwise agricultural community.

Domestic Water, Sanitation and Health

000 Technical details concerning pollution of wells, types of diseases prevalent in the project villages, and similar data will not be found in this report. This aspect of the problem falls within the jurisdiction of the specialized and highly trained public health technicians attached to the Technical Cooperation Service, Lebanon.

30 An ample and safe supply of drinking water is not available for any of the five villages included in the improvement project. En-Nouriyah depends upon a covered shallow well for its domestic water supply, the other villages have access to springs. In most cases these sources are adequate as to quantity except during the summer months. In all cases the purity is questionable. Village

9:Lebanon G-5 (1952)1953 MEI Lebanon MEI

water supplies are not only inadequate and unsafe, they are also unhandy. In all cases the source is outside of the dei'ah and may be a mile or more away. This necessitates a long walk on the part of the women who carry the water in jugs to their homes. 312

One of the major items included in plans for the improvement project is that of furnishing domestic water to the villages. A well has been drilled near Loubya by the Technical Cooperation Service and it is planned to pump from it to a reservoir to be built on a high point. From here a pipe line distribution system will furnish water to fountains in each village. 312 185

In each of the five project villages, the persons interviewed stated that the nearest doctor, nurse, or hospital is located in Saida. Only Loubya reported having no midwife. Sarafand reported two midwives while the other three villages each has one midwife living in the village. It is beyond the province of this report to report upon the qualifications or training of the local midwives. 743 959

Schools

The information on village schools in the project area was secured from the local teachers (Table X). All of the project villages have government-run elementary schools, with the exception of Loubya. Loubya has no schools while Sakaakiyah has a privately-run school as well as the government elementary school. While the school in Ez-Nauriyah has two rooms, the remaining ones are simple, one-room affairs. None of the villages offers education beyond the elementary level. Such higher education, however, is available at Saida or Beirut. 872 346

The number of pupils in each school varies from 20 in the private school of Sakaakiyah to 160 in the 'Adloun government elementary school. This latter school is the only one reporting two teachers. The one classroom is usually small and the children sit, closely packed, at their desks. It is interesting to note the breakdown of the students according to sex. While 267 students attend the five schools, only thirteen of these are girls. The Shee'ah Moslems do not encourage their daughters to attend school. They feel that it is a hindrance to a happy marriage and often encourages disobedience to one's elders. [542]

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Children in front of refugee camp, Lebanon

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Lebanon refugee family

[following p. 27(D)]

427 monthly (30 %.) or yearly (30 %.). When the owner and those not paying rent are subtracted, we find relatively few (6 %.) who have other contract terms.

7.14 Location of kitchen facilities by privacy. Table 107

342 In investigating the adequacies of households in Beirut it was found that nine-tenths of the enumerated households had private kitchen facilities in the house. Cooking outside the house was principally for one-room shacks.

7.15 Location of toilet facilities in household. Table 108

[504] Toilet facilities in the buildings were found in over ninety percent of the sample. Of these, almost nine-tenths are private toilets. Arab types are found overwhelmingly.

7.16 Source of water in household. Table 109

342 345 Water, too, is piped into the overwhelming majority of houses (95 %.) making relatively few who were forced to obtain water from outdoor cisterns or from more fortunate neighbors. In some cases, such as the agglomerations of tin shacks, a city faucet is the only source of water.

7.17 Type of lighting in household. Table 110

354 345 Lighting is by electricity in over nine-tenths of the households in the sample. Characteristically, electrical fixtures are ceiling lights suspended by cords. Lamps are used much less than in western cities, even where wall plugs are available. Less electricity is delivered to households due to a shortage of generating capacity. Almost all of the remaining households use oil lamps.

7.18 Type of heating in household. Table 111

354 Charcoal burners are the sole means of heat in over half of the houses (57 %.). One-fifth of the houses have no means of heat; this is not surprising considering the relatively mild cli-

p. 21 (C)

12: Churchill 1-5 (1968) 1974 MEI Lobaina MEI

Table 108

Location of Toilet Facilities in Household

Location of toilet facilities	Number	Percent	sp.
Total	1904	100.00	
In house	1534	80.57	.009
Outhouse	115	6.04	.005
Public	16	0.84	
Shared	200	10.50	.007
None	32	1.68	
No answer	7	0.37	

Table 109

Source of Water in Household

Source of water	Number	Percent	sp.
Total	1940	100.00	
City	1718	93.37	.006
Neighbour	76	4.13	.004
Cistern	28	1.52	
None	18	0.98	

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p. 82 (5)

16: Gulick E-5 (1952)1954 MEl Lebanon MEl

CONSERVATISM AND CHANGE IN A LEBANESE VILLAGE

John Gulick

491 361 THE COASTAL HIGHWAY which connects Beirut and Tripoli winds between the crashing surf of the Mediterranean and the sharply rising slopes of Mount Lebanon. At one point in the journey northward along this road, the traveler may notice before him a ridge which, from the distance, seems to block his way. If, instead of continuing toward Tripoli, the traveler turns off the main highway at the foot of this ridge and winds his way up the gravel road which climbs its face to the crest, he will find himself at the southern, seaward tip of a roughly semicircular ring of six small villages. At the center of this ring is a seventh village considerably larger than the others. This village is al-Munsif.

361 133 137 Topographically, the area which is occupied by the seven villages consists of three main ridges which project toward the sea in a fanlike fashion, so that the shape of the area is roughly triangular. The ridges are separated by deep, dry wadis; in addition there are other minor crests and gullies, so that the over-all terrain is rough and broken. The land itself is notable for the prevalence of limestone outcrops. The natural flora conforms to the type known as "garrigue," which features low, bushy scrub oak and a variety of small, thorny, aromatic plants. It is a landscape which could not inspire very much confidence in the hearts of ordinary farmers; even to Lebanese farmers, whose fortitude and resourcefulness are justly famous, it has presented a serious challenge.

361 312 But the challenge does not end with land features as such. An even more serious problem is the lack of ground water. There are, indeed, two springs very close to the shore, but both are small and one is brackish. All the water used in the area is winter rain water drained off the roofs of the houses and stored in large underground cisterns, of which there are a very large number. This supply must provide for all the needs of the inhabitants for the entire year. The amount which can be devoted to watering plants is, therefore, extremely limited, and irrigation, in the sense generally applied to the term, is impossible under present circumstances.

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* John Gulick is an anthropologist on the staff of the Department of Sociology at Antioch College. This article is a brief report of a community study which he made in Lebanon from January to July, 1950, under the direction of the Department of Anthropology of Harvard University. He is the author of "The Lebanese Village: An Introduction," *American Anthropologist*, vol. 53 (August 1951), which deals with certain technical aspects of Lebanese village social structure.

3:Royal Institute of International Affairs U-4 (no date)1954 MI Middle East
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Chapter Ten

SYRIA AND LEBANON

The Land and the People

The area of the present Syria and Lebanon lies to the north of Arabia Deserta and is the western horn of the Fertile Crescent. The two republics do not enclose within their boundaries a natural geographic entity and their climate and topography are best studied in relation to the surrounding countries;[1] but within the political boundaries of the two states, the following geographical divisions may roughly be distinguished:

(1) *The Coastal Strip.* This is about twenty miles wide near Latakia and rather less just north of Tripoli, but in some places disappears and the mountains meet the sea. Olives, bananas, citrus, and vegetables are cultivated intensively near Beirut.

(2) *The Mountains.* Starting from the north, the first coastal mountains are the Jebel Ansariya (also known as the Alawi Mountains) which average 4,000 feet and are well populated on the western slopes. To the south is the Homs–Tripoli gap and then starts the Lebanon range with peaks of over 10,000 feet. Even on the upper slopes of this range water is plentiful, there is close cultivation, and the villages and towns are prosperous. Near Beirut are situated the mountain resorts to which most of the city workers move each night when the summer brings its humid heat. The interior ranges of mountains lying parallel to that of the Lebanon are the Anti-Lebanon (between Homs and Zahle) reaching over 7,000 feet and the range of Hermon (between Zahle and the Israel border) which reaches 9,100 feet. Water and cultivation are far less plentiful on these than on the coastal mountains. Farther inland still and to the south of Damascus lie the Leja, a bleak area of igneous rock, and the Jebel Druze, which reaches 5,000–6,000 feet and lies north of the Jordan border.

(3) *Plains and Plateaux.* Hardly any of the territory of Syria and Lebanon lies less than 700 feet above sea-level and south of Hama almost all the land is over 1,600 feet. The richest agricultural land is on fairly high ground and forms part of a

[1] See W. B. Fisher, *The Middle East: a Physical, Social, and Regional Geography* (London, Methuen, 1950).

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East
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MAIN CROPS

	Area (000 hectares)		Production (000 metric tons)		Yields (100 kg. per ha.)
	1951	1952	1951	1952	1950
Wheat	61	70	43	50	7·3
Barley	13	20	14	17	11·8
Cotton	3	2	1	..	..
Tobacco	..	..	3	2	..
Citrus fruit	..	..	75	90	..
Grapes	21	..	80	..	..

.. = not available.

(Sources: Banque de Syrie et du Liban, *Exercice 1952* (Paris 1953); except figures for yields, cotton production, and area and production of grapes, all of which have been taken from FAO, *Yearbook of Food and Agricultural Statistics, 1952*.)

312 241 439 There is enough water for land to be used more intensively than in Syria but there is not enough room to grow all that the country needs. Improved methods have increased the yield of cereals per acre, but Lebanon will always have to import wheat. The crop of grapes is nearly double the weight of the wheat harvest and Lebanon exports grapes, wine, and the best quality arraq. The citrus exports are high but the growers have not yet established the same name for quality as have the Israelis. Melons, water-melons, apples, onions, and potatoes are also important crops and vegetables are exported as far as the oil towns of Kuwait and Dahran. Cotton and tobacco are also grown in small quantities.

423 369 The land is more evenly parcelled out amongst the people in Lebanon than in Syria but, despite the fact that there are many small holdings, there is a general shift from country to town, and Beirut and its immediate neighbourhood hold nearly half of the population. In the coastal regions of intensive cultivation small holdings predominate, while in the plain regions large estates worked by share-croppers are the most prevalent form of land tenure. Some estates owned by rich men are farmed under modern methods and equipment and there is less room for improvement or for expansion in agriculture than in Syria.

Industry

433 Relative to its size, Lebanon is one of the most industrialised countries in the Middle East area. It is probable that nearly 50,000 persons are so employed, of whom over half are factory workers. However, Lebanese industry has only partly recovered from the loss of the Syrian market and some industries had either to move to Syria or to curtail production. The biggest industries are electricity, which produced 130 million kwh. in 1951, and the Chekka cement factory south of Tripoli, which produced 303,000 tons of cement in 1951. Cotton weaving and

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439 1950–1 amounted to £L21·5 million. Over half this deficit was met from 'invisible' earnings, such as the tourist trade and transportation, and the rest from private donations and capital movements. Indeed, during this period Lebanon's balance of payments showed a small surplus of £L2·7 million.[1] Most of Lebanon's trade (about 40 per cent) is with other Middle Eastern countries, but the five most country in her trade is the United States (about 20 per cent). Europe and Great Britain are important sources of imports but not such large export markets. Lebanon's main imports are agricultural products, textiles, machinery, and oil, and her chief exports are agricultural products and textiles. The tourist industry is given full encouragement by the Government and, under certain circumstances, tourists' fares to Lebanon are subsidized.

Development

648 On 24 February 1951 Lebanon signed a Point Four agreement with the United States and the work to be carried out is
• 312 based on the report to the United Nations in 1949 by Mr
185 Gordon Clapp.[2] Irrigation projects are under way at Akkar, Yamouna, and Qasmiya, and there is a proposal to use the Litani river to irrigate over 12,000 acres of land. In August 1953 the Lebanese Government announced a four-year development plan; the main projects under consideration concern road and hydro-electric power development.

Conclusion

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000 The future of Syria and Lebanon will obviously depend to some extent on the past, many aspects of which have not been fully discussed here because the independent political and economic development of the countries began only in 1946. In internal politics events have moved too rapidly for any record to keep pace with them, and there is not yet apparent any stability that would allow us to regard views and information on the political scene as being valid for more than a brief period. As regards their external policy, the two countries have yet to be convinced that there is a community of interest between them and the West. The Western Powers need the use of Syrian and Lebanese territory on which to base a line of defence, but it is not expected that these countries could or should bear a significant part of the burden of defence in men, materials, and money. The Levant wants greater security against Israel than

[1] See table 6, p. 503 below.
[2] UN, Conciliation Commission for Palestine (Chairman: Gordon Clapp), *Economic Survey Mission for the Middle East* (New York, December 1949).

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§ 1 Of the total 160 families in the village, 100 own some land
471 and 60 own no land. The peasant owners are divided as follows

1. Rich farmers, owning about 10 hectares ..	5	families
2. Medium farmers, owning from 3 to 8 hectares	80	"
3. Poor farmers, owning between 1 and 3 hectares	15	"
4. Share-tenants	10	"
5. Labourers	50	"

§ As in Misherfe, two-thirds of the land is uncropped each
241 year. The peasant divides the land into three plots, one sown with a crop, one ploughed but not sown, and one fallow. The wheat yield is slightly higher than the average for Syria, and amounts to 833 kilogrammes per hectare (6¼ hundredweight per acre); barley yields are also slightly higher, being 8 hundredweight to the acre.

§ As a result of the more equal distribution of land, rather
511 better yields, and more irrigation, the standard of living is better than in Misherfe. The first two classes, including half the
262 families, can reach an adequate standard of consumption of food and other essentials, which is reckoned to be 25 kilogrammes of wheat per month, 1 kilogramme of meat per month (i.e. one sheep a year), 40 kilogrammes of olive oil and 20 kilogrammes of 'samn' per year, 4 tins of kerosene and a small quantity of clothing. The remainder of the village, about one-half of the total, that is the poor peasants, labourers, and share-tenants, are unable to reach this standard and live in great
§ poverty, in one-roomed huts. The majority of these cultivators
426 are heavily indebted, and the burden of indebtedness has doubled during the war years, because debts are usually incurred in gold.

L The third study relates to Kfir Sa'ab in the north Lebanon, a
47 hill village of small owner-cultivators. Of the total area of 100 hectares, about 30 are owned by the sheikh of the village. The total number of families is 150 (1,000 people), of which 100 own land and 50 are landless. A few peasant owners are rich with 5 hectares of land; 60 are medium owners with 1·5 to 2·5 hectares of land, and 25 own 0·5 to 1·5. Here cultivation
L is much more intensive than in Syria, and half the land is
• irrigated.

[1 A Shrafie, near Damascus — Analyst]

Lebanon ME1
Syria MD1

into single units, to form individual farms; but shortage of money limited this process to about 50,000 acres.

About half the area of Syria has been surveyed and title registered by the Bureau de Cadastre. As in Palestine, political unrest made it impossible to survey and register some districts, in particular the Hauran and the Jezira. With this limitation the work of the department appears to have been successful.

Water-Rights. One of the great obstacles to carrying out large-scale irrigation schemes is the confusion which prevails about water-rights. According to an unpublished report prepared for M.E.S.C. in 1943 by Professor Addison, one important scheme, the Yarmouse project, could not be initiated, because the complicated question of water-rights had not been settled. Since any big advance in agriculture really depends on irrigation, a settlement of water-rights is essential.

The French authorities have apparently been no more successful in dealing with this question than the British authorities in Palestine and Transjordan. A decree was issued by the High Commissioner in June 1925 nationalizing the water supply, and making all sources of water and water-courses public property, but a further decree in 1926 weakened this wise measure, permitting temporary occupation of water-rights for forty years, so that the result of the legislation has been to increase the confusion.

Control of Irrigation. There is no uniformity of procedure in controlling irrigation schemes, and no central authority controlling irrigation. There are three chief methods of control in force unrelated to each other. These are:

1. The village community in which water-rights are regulated by custom. This appears to be the prevalent method of control in all the village irrigation schemes, of which there are a very large number. Several villages may share in these schemes, and the distribution of water is established between them by custom, and administered by the village authorities. Each owner of land can claim a share in the total water supply measured as a unit of time, for example, one hour every seven days. This method is beginning to prove unsatisfactory. The big owners almost always control the best

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irrigated land, and village chiefs can frequently be bribed to leave open irrigation ditches so that their land is better watered. This frequently happens, for example, in the Ghuta of Damascus, where there is no unified plan for the irrigation of the district and no authority which can enforce the customary rights.

2. The system under which water is owned collectively, or as *Waqf*, in the northern Beqa.

3. Private ownership by large landowners. This is usual in the Lebanon where there are a number of small private schemes.

These methods of control apply to the smaller schemes. Large-scale schemes have been operated either by:

1. Private concession. Only one relatively large-scale concession is actually in operation, the Nahr Ibrahim (Adonis) scheme.
2. The State. State-controlled works have been carried out by
   (i) authorities directly under the control of the French authorities;
   (ii) authorities directly under the control of the Lebanese Public Works Ministry;
   (iii) Lebanese or Syrian authorities under the control of the *Délégation Générale*.

There is great need of a central authority to co-ordinate the supply of water. In the south Beqa, for instance, much irrigable land is left unirrigated and much water allowed to run to waste for lack of such an authority.

State Land. One of the main reasons for the lack of intensive cultivation in central Syria is that the State lands have never been systematically settled. Very large areas are State domain, that is, land registered as the property of the Turkish Sultan, Abdul Hamid. Under the mandate, this land became the property of the local government. Under the Turks these lands were used for the 'displaced persons' of the old Empire, who were driven out when Turkish territory was lost, but they were still sparsely settled when the French took over.

After the rising of 1925 the French authorities began to settle

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better cultivation, if more machinery were available, to reduce the fallow to one year out of two, instead of two out of three in the districts where this is customary; it would also be possible, by machine cultivation, to keep weeds under control. (See Chapter VIII.)

The main possibilities of development, however, depend on irrigation. At present an area of some 500,000 acres is irrigated, and even under the existing scheme much water is wasted. How much additional land could be irrigated is a subject for controversy. Mr Soubhi Mashoum, a Syrian irrigation engineer, suggests that the total area which could be irrigated, including the use of the Euphrates water, may be as large as 1,200,000 hectares (2,960,000 acres):[1] but this figure refers to the area which it is *physically* possible to irrigate, not the area which could be irrigated with any prospect of economic return.

A more exact and detailed estimate was prepared by Professor Addison, the irrigation expert, who surveyed existing schemes in 1943 and considered that the extension of those which was then economically practicable would irrigate some 68,000 hectares (168,000 acres) in addition to the area already irrigated.

The difference between these two estimates indicates how wide a range of opinion there is. A survey is now being prepared by a British irrigation firm on behalf of the Syrian Government, to provide the basis of development projects, and pending its publication it is impossible to quote any more satisfactory estimates.

The Jezire and Euphrates Provinces. In inner Syria, the Jezire area and part of the Euphrates province in the north-eastern corner of the country, there are quite large possibilities of extending cultivation both in the rain-fed zone, and by irrigation. North of a line from Tyree to Sheikh Saleh there is sufficient rainfall to water the winter crops. In the 'Duck's Bill' and along the Turkish frontier to a depth of about 12 miles to Derbisiye, the rainfall is 30 to 100 centimetres per year (20–40 inches), and south of this there is another belt with rainfall of 25 to 30 centimetres (10–20 inches), about 50 miles wide.[2]

[1] 'Le Problème de l'Eau en Liban et en Syrie', in *L'Agriculture, Richesse Nationale*, (Beirut, 1946).

[2] This information is based on an unpublished report prepared for M.E.S.C. in 1944.

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671 be punished with imprisonment not exceeding 12 months or
312 a fine not exceeding 50 pounds, or with both such penal-
681 ties.... The cost incurred in making good any damage.... shall be borne by the person convicted" (Article 35).

"Any person who, without permission... takes or draws off any water in an irrigation area... shall be punished with imprisonment not exceeding six months or a fine not exceeding JD 45 or with both penalties." The costs for restoring the area to its original condition shall be charged to the person convicted (Article 36).

"Imprisonment not exceeding one month or a fine not exceeding JD 10 or both such penalties" will be inflicted on whomsoever "by any negligent act or omission damages, alters or enlarges any government irrigation works or interferes with the flow of water... causes damage to roads, buildings, irrigation works... belonging to the government or to private individuals or societies, corrupts or fouls the water, destroys, injures, defaces or removes any land, level mark or water gauge, obstructs any government official in the execution of his duties, disobeys provisions of published notices or contravenes any provision of this law for which no specific penalty is provided" (Article 37).

In the event that it is impossible to ascertain the author of any punishable offense, the Collective Punishments Law of 1926 shall be enforced (Article 38). The director may, moreover, "deduct from the supply of water to which such land may be entitled.....such amount as he may estimate... equivalent to the benefit wrongfully acquired" (Article 39).

"Any person who willfully gives false evidence in proceedings under this law...shall be punished with the penalties provided for the giving of false evidence in the Penal Code" (Article 40). Punishments contemplated under this law shall not exclude proceedings against any offender under the provisions of the Penal Code (Article 41).

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671 While the country of Lebanon is not a Moslem country, as
312 in all countries of the Ottoman Empire the articles of the Ma-
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jelle code governing water use were in force until Lebanon was placed under French mandate. 671 3/20 921

French water legislation in Lebanon is based on two fundamental orders called arrêtés. The first of these, Arrêté No. 144/S dated 10 June 1925, delimited and defined public domain in the state of Greater Lebanon and Latakia (territory of the Alaouites) which was extended, by Arrêté No. 295/S dated 4 November 1925, to all territories under French mandate, both Lebanon and Syria. The second, Arrêté No. 320/S of 24 May 1926, governs the conservation and utilisation of waters of the public domain. Article 24 of Arrêté No. 320/S has been amended by legislative Decree No. 288, dated 28 November 1942.

Since it does not appear that, from the date of the complete independence, new water laws have been enacted by the Lebanese government, these laws are still in force."

According to these two above-mentioned bills, waters are governed as follows:

Decree 144/S of public domain comprises 28 articles and four chapters. Articles 1 to 4 define public domain. Articles 5 to 13 delimit it, Articles 14 to 21 refer to temporary occupation thereof while Articles 22 to 26 contain general provisions.

Article 2, which is fundamental, declares that water belongs to the public domain. It reads:

> "The following shall be part of the public domain, except where Article 3 of this decree applies: the sea coasts, marshes and salt ponds; water courses of all types within the limits prescribed for the height of water running between banks before overflowing; ground waters and springs of all types, embankments along waterways; lakes, ponds and lagoons; waterfalls which can produce power; navigation, irrigation, drainage and land reclamation canals and their embankments; aqueducts when such works are constructed for public use; and sea dykes and dams controlling rain water."

Also included as part of the public domain are military construction works, telephone and telegraph lines, all communication facilities and ports, water power works, works for the transportation of electric power and any public works constructed for their use.

671
313 This decree also prescribes that public domain lands and
423 waters shall be defined for all countries under mandate by spe-
cial committees and that the boundaries of the public domain
shall be definitively set forth in a decree issued by the head
of the government.

Finally, the decree envisages the possibility of endowings,
with regard to the public domain:

1. concessions or leases for temporary occupation for a
term renewable by tacit agreement and on royalty;

2. concessions or leases for longer periods of occupation
which must be renewed every five years.

Every year, a list of all permits granted shall be drawn up by
the Public Works Service. Fines are prescribed for contraventions.

Conservation and Use of Waters of the Public Domain

Decree No. 320 dated 26 May 1926 relating to the conserva-
tion and use of public domain waters is the basic water law. It
is composed of 64 articles divided into nine chapters.

Water Policing and Conservation

313. Articles 1 and 2 prohibit the placing of any impediment to
bar the free flow of waters of the public domain or the
trespassing on borders of watercourse, marshlands, ponds,
lagoons, water springs and headwaters, lakes, etc. as well
as in the upper reaches of aqueducts, water conduits, ir-
rigation canals, drainage and reclamation works, the exer-
cise of which is declared to be in the public interest.

Also prohibited is the cleaning, deepening, straightening,
altering or regulating of watercourse, exploratory surveying
or tapping of ground or artesian waters and, generally
speaking, undertaking any type of work which may affect the
flow or regime of waters belonging to the public domain.
However, the digging of non-artesian wells down to a depth
of less than 150 meters may be undertaken by private land-
owners.

Article 3 prohibits the destruction or damage of hydraulic
works and their appurtenances and the fouling or pollution

of waters and springs. The area of protected areas will be established in each case by government decision.

Permits and Concessions (Articles 2 to 27)

Water from non-reticulation wells dug by private persons, with a flow of less than 100 m³ per day, may be used freely without any payment (Article 2).

Temporary One-Year Permits. These can be granted under Article 17 of Decree 1449) for the erection of non-permanent structures for the use of waters of public domain, the extraction of materials, the cleaning and care of watercourses and waterways, research work on ground waters and natural water courses as well as the care of watermarks and the regulation of waterways (Article 3).

The act of authorization sets forth all the special conditions covered by the permit (Article 3). In the case of the managing of ground waters, if the request for concession is not granted within four months, it is considered as having been rejected (Article 5).

Temporary Permits for One to Forty Years. Permits for use of all power may be granted in the following cases:

1. the erection of permanent works for the drawing of water or for drawing up of water resources;
2. the use of water power;
3. the drainage of marshlands and their reclamation;
4. the use of ground, extraction, removal or thermal waters.

Rules and regulations setting forth general conditions, exceptions to be taken, term of the permit and time allowed for the completion works shall be issued simultaneously with the permit (Article 7).

Notification of the granting or change of such permits must be given to the interested parties at least ten years before the expiration date; otherwise the permits shall be automatically prolonged for a period equal to half of the original term of validity. When the origi-

312 425 land permit regulations to specify, permits for the agricultural use of water may be renewed for a period of 40 years.

Concessions. The projects envisaged above require permits even when they are projects of public utility. Such permits may not be issued for terms of more than 75 years.

A set of specifications prescribing conditions under which water may be drawn, the periods of use, measures for the care of water, the maximum power of the water fall, the deadline for the completion of the construction works, the term of the concession, the water reserves to be maintained, the financial conditions, the disposal of these works upon expiration of the concession and a clause binding for the eventual repurchase of the project shall accompany the concession.

[illegible] Fees and Royalties. Royalties shall be paid for permits and concessions to the state (Article 14).

312 454 Government Intervention. Rules and regulations on expropriation of land and water for public purposes shall be applicable to concessionaires, and the state may assert such rights as well as alter or demolish, against payment of an equitable indemnity, legally-created concessionaire works (Article 17).

Servitudes and Indemnities

312 454 The beneficiary of a permit or concession may take advantage of all servitudes in the execution of the work; namely, servitudes on occupation of private property, the straightening of dams, the submersion of banks and of tracts of land, etc. The government may, where an friendly agreements have been reached on specific points, authorize the concessionaire to avail himself of the above servitudes provided he deposits a guarantee against possible damages.

Article 18 stipulates the indemnity to be paid by a concessionaire wishing to make use of certain servitudes as well as the arbitration procedure to be followed to settle disputes which may arise.

The concessionaire has the right to repurchase private ir-

tion and to use water existing at the time of the issuance 312
of the concession, either upon payment of a cash indemnity 325
or a compensation in kind consisting of the restitution of water or water power previously used. The said servitudes are also applicable to the restitution of water or water power.

In case of disagreement as to the amount of the indemnity, the matter shall be placed before the competent administrative authorities. In no case may the amount be more than 200 pisetras per kilowatt capacity of the total waterfall.

Recognition of Water Rights

Articles 21 to 24 regulate the procedure to be followed in the recognition of private titles to property, usufruct privileges and the right to use water belonging to the public domain. Such rights may be recognized upon the request of the interested party or upon the request of the head of the government who, in either case, shall establish by decree the areas within which such action may be taken.

A commission to establish titles shall be appointed by the head of the government. It shall be composed of a magistrate or presiding judge who shall act as chairman, an official of the Public Works Service, an official of the Land Service and two local notables.

Within a period of time established by decree, but which shall not be less than 30 days, the interested parties may submit to the commission all statements, titles and evidence supporting their water rights. The commission shall inspect the area and draw up a list of the rights claimed. It shall report thereupon to the head of the government who shall set forth in a decree the titles and rights thus recognized.

Article 25 of this section, modified by Legislative Decree No. 288 dated 28 December 1950, permits the hearing of appeals before the appeals courts for judgments taken by the commission concerning the recognition of pre-existing water rights. Travel expenses of the commission shall be defrayed by the private persons requesting such service.

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312 Concerning the Establishment of Water Conduits and Aqueducts for a
749 Public Drinking Water Supply

Articles 25 to 29 set forth the prescribed width and other specifications for establishment along drinking water conduits and aqueducts.

The width of such aqueducts shall be stipulated by decree of the head of the government. The cutting out of plantations or construction work along these conduits is prohibited, and the administration may order the felling of trees already growing there and the demolition or change of any previously existing structures within such areas.

Waterworks Construction Associations

312 Upon the initiative of the interested parties and the head
479 of the government, [illegible] associations may be formed
154 for the purpose of building works for agricultural improvement, flood control, the repair, maintenance and cleaning of water courses, land drainage, reclamation, calcareous liming and the construction of embankments or irrigation works.

Requests addressed to the head of the government must contain all pertinent information as to the area involved, the purpose, the projects and the type of association intended.

If such a request, upon being reviewed by the Director of Public Works, is deemed worthy of approval, the local landowners shall be called to a meeting by the head of the government. The meeting shall proceed to the selection of a chairman, and the minutes of the meeting, including the names of the persons attending, shall be kept. The heads of municipalities, administrators of public property and the Director of land surveys for the public domain may also attend such meetings.

If the formation of such an association is voted by simple majority, the project, with complete details as to the nature of the association, its operation, the contemplated program of work and estimates of expenditures and contributions of each person involved shall be submitted to the head of the government who shall order a 30-day investigation of the matter, during which time any persons or persons who have not joined the contemplated association may either be exempt their land, against payment of an indemnity, to

the association organized.

While this period and after the Minister of Public Works has advised in favor thereof, the head of the government shall issue a decree stating that such an association has been established. This decree shall set forth its aim, the projected construction works and the method of defraying expenses by dividing them up among members of the association.

An annual budget shall be submitted for approval to the head of the government who is authorized to set or change the total tax sums to be set aside for this purpose.

Disputes over the operation of the association shall be heard by the administrative tribunals.

Plans and methods of execution of all construction works must be submitted to the Public Works Service which will exercise technical supervision.

The head of the government may grant non-interest bearing loans and subsidies to the association, on terms which he will prescribe, for a period of no longer than 20 years.

Articles 48 to 53 govern the rules of procedure of such associations, particularly their administrative organs (assembly,syndicate, director and staff), their procedure for their election and their term of office.

The general assembly, as written in the constitution, may also dissolve the association by a simple majority vote, provided such action is approved by the head of the government in an official decree.

The head of the government may, in case of mismanagement, place in the hands of one person full power over the director and the association, and he may also send representatives to all meetings or committees.

Jurisdiction and Penalties

Articles 57 to 59 prescribe jurisdiction and penalties.

It is stipulated that infractions of this decree shall be suppressed in the form of a deposition by officers of the

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313 judiciary police, officials of the Public Order Service or
631 police officers.

Infractions are punishable with a fine of from two to 250 pounds and prison sentences of from one day to six months, or either of these two punishing any person who obstructs the execution of authorized works may also be punished.Infractions fall under the jurisdiction of the local police courts.

Second offenders, committing a second infraction within a period of 12 months after their sentence, except in cases where their good faith can be proved, shall be subject to the maximum punishment of fines and imprisonment or one of these.If the same person commits a third offense, the penalties shall be doubled.

If any such infractions of the law causes damage to the public property, the delinquent, in addition to the fine,must pay for the reparations thereof.

Special Provisions

LE
313 To safeguard public health and general or stop floods, the
631 head of the government may revoke or change concessions,
656 deny persons desirous of voting rather to which he is legally entitled or campaign rather,discharge and reinstatement results may be an apparent payment of a sum decided upon by friendly agreement,or by any choice the right to transport such rental to indemnitory plots of ground by the procedure described in Article 13.

Final Provisions

The concluding articles of this decree (Articles 11 and 12) abrogate any standing provisions contrary to this decree and change the public authorities with the implementation thereof.

LIBYA

LI
313 Taxes in Libya were governed,until the time of the Italian
631 occupation in 1911, by the Ottoman articles of the Ottoman Capitulations. From 1911 to 1943, the Italian government

their relatives abroad. The villages are less compact than in other parts of the Near and Middle East, and separate farmsteads are common. Extremes of poverty, associated with primitive standards of sanitation, are most frequently encountered in the villages of southern Lebanon. In the cities, substandard housing is found chiefly in the old, congested quarters and in the Armenian sections.

The typical dwellings in all parts of the country are constructed of stone, cement or concrete blocks, with a surface of white-washed or tinted plaster. The roofs are of two general types: pointed and of red tile, or flat, with a covering of cement or of mud and brush. The houses vary in size from one to several rooms, sometimes with two or more stories. The use of wood as a building material is prohibited by the fire regulations in the towns, but small wooden sheds are occasionally seen on the outskirts.

Beirut is a cosmopolitan city, a mixture of Arabic and Western culture. The older parts of the city are overcrowded, with narrow streets lined by innumerable small shops, which frequently have living rooms in the rear. Apartment houses, interspersed with detached dwellings surrounded by colorful gardens, dominate the newer developments. Architecturally, all gradations are encountered between old Arab-style houses and modern villas.

ENVIRONMENT AND SANITATION

Water Supplies

Water supplies are obtained from streams, springs and wells, and, in general, are abundant in the coastal and the mountain districts but deficient in the interior. Beirut derives its water supply from the Nahr el Kelb, or Dog River, which is fed from an underground spring in the hills about 10 miles from the city. It flows by gravity through a tunnel and open canals to Chalhaya, 5 miles distant, where it is treated [illegible] preliminary rapid filtration, slow sand

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filtration and chlorination. It is then pumped to 3 service reservoirs in the city and subsequently to the separate house connections. This supply is used only for domestic purposes, but the capacity of the present plant will soon be inadequate to meet the needs of the rapidly expanding population. The water is subjected to bacteriologic tests every other day at the waterworks, and is also examined periodically in the French university laboratories on behalf of the government authorities. Private wells provide supplementary sources of supply in some areas on the outskirts of the city.

The water supply for Tripoli is derived from springs in the near-by mountains. It is chlorinated before distribution, but is not otherwise treated. The water is comparatively free from contamination at the source, but pollution sometimes occurs in the distribution system. In the mountains, water is usually taken from springs, and in some localities it is piped from a common source to several adjacent villages. In the larger towns, as Aley and Zahle, it is treated by chlorination. Supplementary supplies are often provided by rain-water cisterns. In the poorer districts of the towns, and in the rural villages, water is distributed through community outlets and may be transported a considerable distance by the individual families or by donkey carriers. Many well and spring sources are unprotected, and contamination is frequent. In parts of the Lebanon range the water passes through fissured limestone rock, and pollution may be traced to distant villages. The local water supplies are not continuously supervised by the government health officers, but samples are collected by the district physicians at irregular intervals, chiefly when contamination is suspected. These are sent to the bacteriologic laboratory of the French University medical school.

For many decades the only sewerage works in the country was at Beirut. In 1925, the government undertook the construction of a plant on the Litany River to benefit

p. 2 and (3)

Lebanon to furnish filtered and chlorinated water to a number of villages in the area which were completely without suitable sources of supply. A program for the provision of satisfactory water supplies for most of the towns and the villages in the country has been projected by the Ministry of Public Works, which is responsible for their construction in consultation with the Ministry of Public Health.

Numerous small irrigation projects are in use, especially in the orange groves and the banana plantations of the coastal region and in the truck farm areas of the Bekaa. The majority depend upon wells operated by pumps. Two important large-scale programs have been undertaken within recent years: the diversion of the western portion of the Litany River, known as the Nahr el Kasimiya, to irrigate part of the coastal plain between Tyre and Sidon; and the construction of canals from the spring-fed Lake Yammouline, to provide for the irrigation of sections of the Bekaa, in the vicinity of Baalbek. The harnessing of the Litany River for irrigation and hydroelectric purposes was started in 1952, while plans are under way for the irrigation of the Bekaa plain from the Nahr el Kabir and adjacent streams and for the better utilization of the Orontes River.

Waste Disposal

Sewers exist in some of the larger communities, but septic tanks, cesspits and pit latrines are the usual methods of sewage disposal in most towns and villages. A sewerage system serves about 50 per cent of the city of Beirut, the sewage being discharged untreated into the sea from 7 major and numerous minor outlets. Septic tanks and latrines are employed for the houses which are not connected with the sewers. A municipal sewerage system also exists in part of Tripoli, but cesspits are used in many sections of the city. In some areas the sewage is collected in open drains for the irrigation of the orange groves, the fig orchards and the vegetable gardens.

and Sidon were roughly comparable. In a series of 1,131 complement fixation tests on miscellaneous human serums sent to the Wassermann laboratory of the University hospital, 7 per cent gave a positive reaction with Q fever antigen.

SUMMARY

Lebanon, formerly one of the French mandated Levant states, has been an independent republic since 1941. It is a compact territory, with an estimated population in 1942 slightly in excess of 1,220,000 and a density of roughly 300 inhabitants per square mile. Unlike the surrounding Arab countries, the Christian and the Moslem elements of the population are almost equal in collective numerical strength and political importance.

Responsibility for the health of the people resides in the Ministry of Public Health of the Lebanese government, which acts in co-operation with other ministries and numerous philanthropic and religious organizations. The public health and the medical care functions of the Ministry are directed from Beirut. The city is one of the leading medical centers of the Near and Middle East, with two university medical schools and associated hospitals. In 1942, there were 73 hospitals (including sanatoria) in the country, with an aggregate capacity of 3,101 beds, or approximately 4.2 beds per 1,000 population. Eight hospitals were maintained by the Ministry of Public Health, while 31 were conducted under private or philanthropic auspices and 5 by foreign organizations. In addition to the outpatient services of the hospitals, a central polyclinic, 17 rural dispensaries and 4 tuberculosis clinics were operated by the Ministry, a polyclinic by the municipal health department in Beirut, 16 dispensaries by the Lebanese Red Cross, and various units by other organizations.

Water supplies are derived from streams, springs or wells, and are usually adequate in the mountain region but often defective in the interior. Almost municipal water sup-

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...ities are available in Beirut, Tripoli and some of the mountain resort towns, but many well and spring sources are unprotected and subject to pollution. Sewerage systems exist in parts of Beirut and Tripoli, but primitive methods of sewage disposal are employed in most towns and villages. The standards of food sanitation vary; the enforcement of sanitary regulations devolves upon the municipal health organization in Beirut and upon the government in other parts of the country.

The most prevalent disease problems are malaria, typhoid fever, dysentery and trachoma. Tuberculosis, pneumonia, venereal diseases, rheumatic fever, helminthiasis and skin infections are common. Rickettsia by...

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[illegible] trade [illegible] [illegible] [illegible]

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system of private schools. The report again an inflow method, but the share fell from 31.7 per cent of total appointments in 1961 to 11.4 in 1965. Nationally, although expenditure on public works increased, their share declined from 15.7 to 15.4 per cent.

[illegible]

During the period 1961 to 1970, inclusive, government expenditure on development totalled 11.76 million. Of this 11.175 million was spent through the ordinary budget and 0.125 million through the Development Works Fund, a special expenditure from the budget surpluses of the two sub-post years.

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Until the creation of the Bank of Economic Planning and Development, in February 1972, all development projects were planned and executed by the government departments concerned, principally the Ministry of Public Works and the Ministry of Agriculture. The Bank, which consists of five executives and seven specialist advisers, is charged with assessing the country's economic resources and possibilities, administering a general development plan and supporting procedures for financing it. Decisions on, however, remained in the hands of the departmental ministers.

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[illegible]

Expenditure on irrigation and drainage from both the ordinary budget and the development fund totalled about 12.75 million in the period 1961 to 1971. This expenditure has resulted in the completion of 21,000 holdings, an increase of 1.25 per cent over the previously irrigated area, an additional 250 hectares has been irrigated by a private entrepreneur. The projects involved are now here in a small scale.

The principal irrigation projects being carried out in close consultation with the Ministry of Public Works, Transport, Tourism and Urban Property, which cover between them a catchment 12,000 hectares of land. The two main projects are the Greenmont, Knighton, New Dundee and Urban project. The Greenmont project, on the Upper River, was begun in 1961 and at present comprises 1,200 hectares in all to be completed to another 1,700 hectares in 1975, when every area comprises an 12.12 hectares, of which 8.1.2 million has been spent to the end of 1971. Negotiations to supplement the 1971.

1/ Rule 3, Section, The Bank, Bureau of Lithium. This represents 3.7 per cent of total expenditure during this period, the figures for 1970 to 1975 are today provisional.

2/ In November 1971, a Secretary of Economic Planning was established. Its membership the Permanent Board, the Bureau of Statistics, the Bureau of Trade, the Bureau of Trade and Industry of the Treasury and 1 Director and the Bureau of Trade. Its tasks are within a consultation and are also closely involved between Acting with consultations and appointment [illegible] Planning Commission Bureau. 7 February 1972.

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The other irrigation areas in northern Lebanon, which at present irrigate 5,000 hectares, are scheduled to cover a total of 15,000 hectares, of which 7,500 are to receive perennial irrigation and 7,500 spring irrigation. Total costs, including the registered portion, were estimated at 12.4 million. It is expected that work on the project will be finished by 1958.

Lake Tiberias, in north central Lebanon, at present provides 2,500 hectares with spring irrigation and 500 hectares with summer irrigation. These figures are to be raised to 10,000 and 1,000 hectares, respectively. The cost involved is 12.7 million, in addition to 12.1.7 million already spent. No date has been set for completion. Irrigation from the Litani River, in northern Lebanon, which at present covers 1,000 hectares, would be extended to an additional 4,000. An detailed plans have as yet been worked out.

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Both Lake Tiberias and the Litani River form part of a seventy-five year concession granted to a private company for the generation of electricity. [illegible] with a capacity of 4,000 kilowatts will be erected on Lake Tiberias and a further 3,000 kilowatts may be added later; generators with a capacity of 1,000 kilowatts, providing an estimated 25 million kilowatt-hours per month, will be set up on the Litani. The total cost, including transmission lines, is estimated at 12.10 million. A further 4,000 kilowatts may be added by using the fall of Lake Tiberias, to permit storage. The capital of the concessionary company is 12.20 million, of this 60 per cent has been subscribed by Lebanese residents and assignees and it is hoped to raise the balance from Europe and other foreign countries.

The Nahr Ibrahim hydroelectric works have a total capacity of 1,200 kilowatts and a maximum capacity of 4,000. Built by a concessionary company, they began operating in 1951, and in 1953 supplied 20 million kilowatt-hours of electricity. In 1954, the company was authorized to increase its capital from 12.1 million to 12.2.75 million. The Government has also proposed to guarantee a 12.1 million loan to be obtained by the company by the Bank du Liban et du Liban. A second power plant, with a maximum capacity of 12,000 kilowatts and an estimated annual output of 60 million kilowatt-hours, is to be built, at a cost of 12.17 million, including a tax and other considerations. It is hoped to complete the project in 1957, after which a third plant, with a capacity of 12,000 kilowatts is contemplated. A thermal station at Zouk, with a capacity of 12,000 kilowatts, is scheduled for completion by the end of 1957. The capacity will be doubled shortly after. 1/

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The Litani River project, which provides for both irrigation and power, is the most important scheme under study in Lebanon. It aims at irrigating, at a total cost of 12.72 million, 25,000 hectares 2/ of which 15,000 are to the Bekaa plain and 5,000 to the coastal plain, and incidentally controlling the unfavourable erosion of river. At the same time, power will be provided by

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1/ Le Commerce du Levant, 22 October 1954.

2/ This figure is exclusive of the 1,500 hectares in the Qasmieh scheme, which will also be irrigated by the Litani River. In addition, the Litani scheme will provide seasonal irrigation for 4,000 hectares.

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